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THE MADRAS CLINICAL JOURNAL

JOURNAL OF THE MADRAS STATE BRANCH INDIAN MEDICAL ASSOCIATION
(With which is incorporated the "Miscellany")

ol XXV OCTOBER 1958 No. 4

FOR CHECKING
TROUBLESOME VOMITING

PYRIMESIN

VIT. B_6-B_1-C-PHENOBARBITONE
TABLETS

THE SAFEST ANTIEMETIC

*

East India Pharmaceutical Works Ltd.,
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Vol. XXV] OCTOBER 1958 [No. 4

REVIEW OF DERMATOLOGY

By

Dr. T. V. VENKATESAN, M.B.,B.S., F.C.C.P., F.D.S. (London) F.A.I.M.

Anatomy and Physiology

The skin is the boundary between the body and its environment. It is a shield without which life is impossible. The principal functions of skin are :

1. *Protection*; The skin is conforming soft and elastic and can therefore withstand a variety of shocks from within and without. It prevents inward transmission of physical and chemical agents and the undue loss of critical substances as water. The lack of permeability affords insulation against complex chemical environment in which man lives.

2. *Heat regulation* : The sweat glands and the cutaneous blood vessels play an important part in temperature regulation.

3. The sensation of heat, cold, pain and touch are perceived through the nerves which permeate the skin.

4. *Secretions* :

(*a*) Sweat secretion which regulate body temperature.

(*b*) Sebum secretion which produces suppleness of skin.

The skin contains the following layers :

(i) The epidermis.

(ii) The dermis (Corium).

(iii) The subcutaneous tissue.

The epidermis is 0·2 mm. in thickness and contains the following layers from without inwards.

(1) Stratum corneum or horny layer.

(2) Stratum lucidum.

(3) Granular layer.

(4) Prickle cell layer or stratum Malphigi.

(5) Basal cell layer

The stratum lucidum is found in the palms and soles.

The epidermis has no blood vessels but has intercellular channels through which nutrient material can apparently flow.

All the layers beneath the epidermis may be considered as one stratum germinativum and the cellular stratification may be considered as a reflex of the various stages through which the basel

cell pass through in their conversion into horny material.

The melanin forming cells are found in the basal cells and are found to invade the primitive epidermis in foetal life from neural crests. The melanocytes are branches or dentritic cells in the epidermis. They are the only cells capable of forming melain, the principal pigment of the epidermis. Eventually same melanocytes die and are shed with ordinary epidermal cells. This accounts for the presence of some melanocytes high up in the epidermis.

The keratin forming cells or Malphigian cells give rise to other cells of the epidermis. For a long time it was thought that the basal cells did not contain prickles and therefore this led to a misunderstanding that the basal cells formed a separate system. The prickles are found as fibrils. The electron microscope has shown that the basal cells also contain these fibrils. The cells change in shape as they pass from the basal layer to stratum granulosum and stratum lucidum. These two layers are important in keeping up as a barrier to the inward transfer of substances. This is the boundary that prevents the rapid loss of water from the epidermis into the environment. The stratum corneum or horny layer contains dead keratinised cells. It contains 20% of water in contrast to 70% contained in the lower portions of the epidermis. Keratinised cells are constantly desquamating on the surface. The stratum corneum is quite thick on palms and soles. The cells of this layer are strongly hydrophilic. It has now been established that contrary to general belief the skin is dry not due to lack of sebum or skin oil but is due to lack of water. The skin lipids prevent water loss.

Pigment Formation: Melanin is synthesised by meclanoblasts in the epidermis. The aminoacid Tyrosine is the important precursar to melanin. The enzyme tyrosinase is a copper protein attached to mitochondria of pigment forming cells. This enzyme catalyses the oxidation of tyrosine into melanin.

Tyrosine—→ Dopa—→ Dopaquinone —→ Melanin.

The melanin forming cells in the epidermis send out dendritic process which end in cupshaped ends. Most of the pigment passes via the cupshaped buttons and is excreted via the horny layer. Recently it has been found that a melanocyte stimulating hormone of the anterior pituitary controls melanogenesis. There is balance maintained between M.S.H. of the anterior pituitary and adrenal cortical steriods. This explains the pigmentation of the skin in Addisons' disease. Various other pigmentary disturbances such as darkening of the skin of the nipples and chloasma in pregnancy is due to increased M. S. H. production. In addition, progesterone has a direct M. S. H. like effect.

Keratinisation: Keratin is the principal ingredient of the stratum corneum. There are two types of Keratin (1) Soft Keratin which is produced by the epidermis all over the body. (2) Hard Keratin which is found in the hairs and nails.

Keratin does not suddenly appear in the stratum corneum but is present through out the entire epidermis. It is more durable in the stratum corneum than in the Malphigian layer. It is a finished product in the stratum corneum. There are Keratohyaline granules in the stratum granulosum but these have nothing to do with the keratin formation since keratin is formed in the hairs and nails which contain no hairs.

Permeability of the Skin

The epidermis behaves like a membrane with negative charge. The layer which confers this charge lies in the transitional zone between stratum corneum and the

upper layer of the prickle cell layer. This transitional zone is lacking in the frog nnd in this water and electrolytes pass through readily. In a normal numan being permeability increases when the epidermis interfering with electrical resistance. The epidermis is impermeable to all nongaseous substance and hence there is relative ineffectiveness when antihistamines and anaesthatics are applled locally. If the epidermis is impermeable by what route the infection gaius entrance? The route is via the folicular orifice and the sebaceous gland. Water penetrares the greasy sebaceous duct with difficulty while factts and fat solvents penetrate witn ease.

Various chemical classes of compounds penetrate skin as follows :

1. Water penetrates hardly at all.

2. Disassociated electrolyte pass through with great difficulty.

3. Gases and many volatile substances pass through skin easily.

4. Many types of lipoid soluble substances pass through skin with moderate ease. Steroid hormones and Vitamin D may be absorbed.

5. Many compounds may be intro duced into skin by electrophoresis.

Nails

The growth of the nail is a complex epidermal cell function. The thickness of the nail plate is 0·5 mm. to 0·75 mm.

The prominent white semilunar areas of the nail is known as lunule. This is commonly present in the thumb nail and is less frequent in other nail.

The nail plate contains three portions viz: (*a*) the root which is entirely concealed within the skin, (*b*) the fixed portion and (*c*) the free edge of the nail.

The nail plate exhibits various colours usually varying to pink. The free edge of the nail is whitish grey. The nail plate contains many layers of keratinised cells fused into a homogenous mass in which the cellular outlines are indistinct.

The nail may exhibit a variety of disturbances:

(*a*) Large whitish spots due to deviation in anatomic keratinisation.

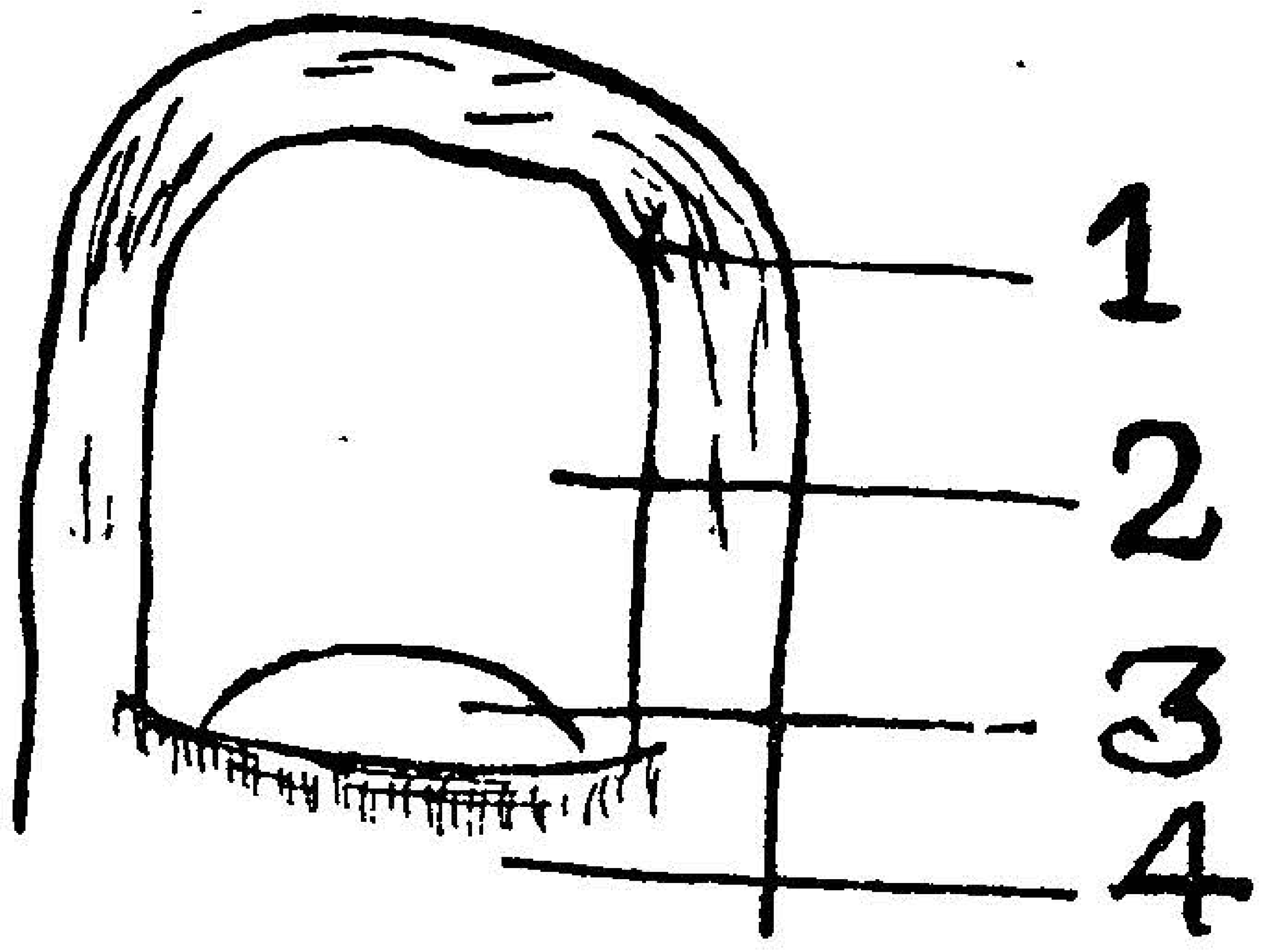
(*b*) Beau's lines are transverse lines found in pulmonary tuberculosis and trauma produced by manicuring.

(*c*) Transverse white bands called Mee's lines are seen in chronic arsenical poisoning, cardiac infarction, psoriasis.

(*d*) Clubbing of the fingers produced in respiratory and circulatory diseases.

(*e*) Spoon shaped nails in anaemia.

(*f*) Longitudinal furrous are seen in senility.



NAIL

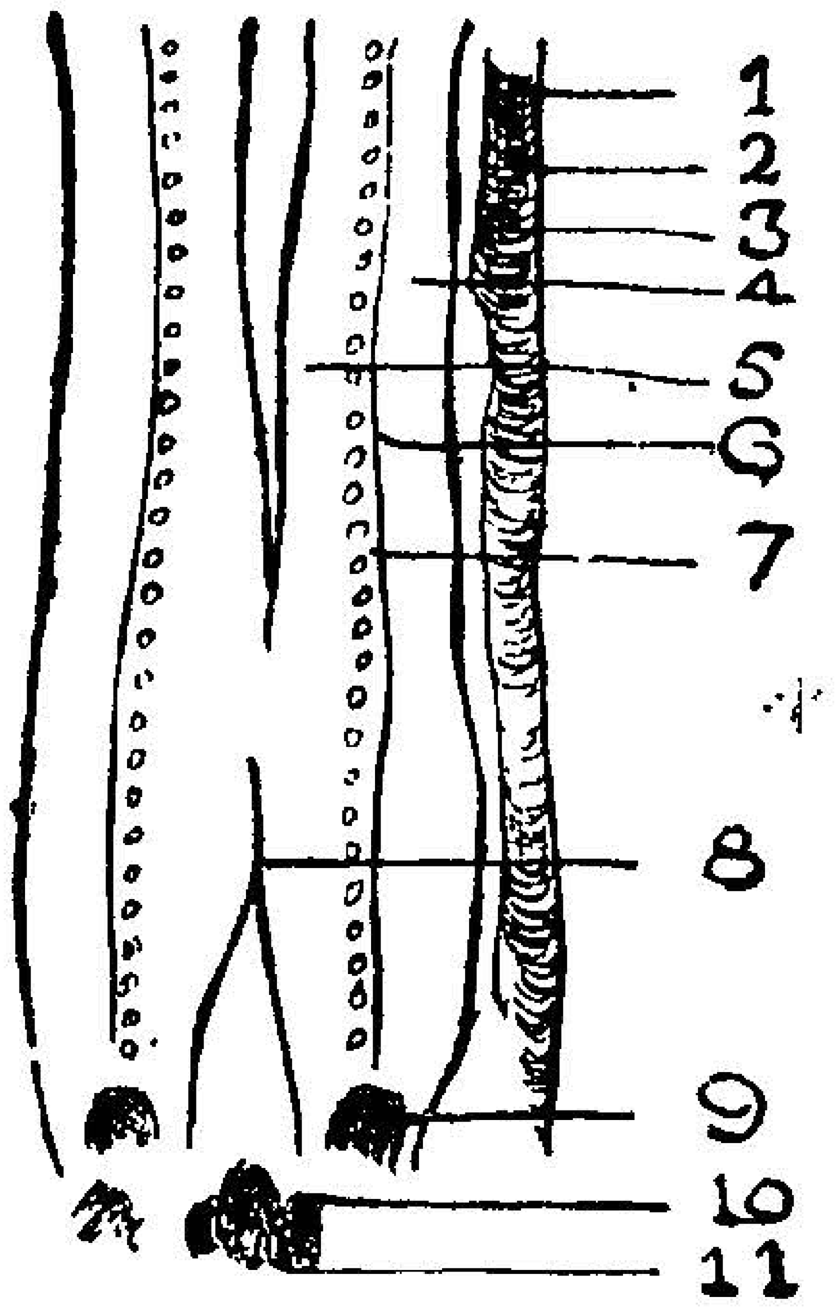
1. Lateral nail fold

2. Nail plate

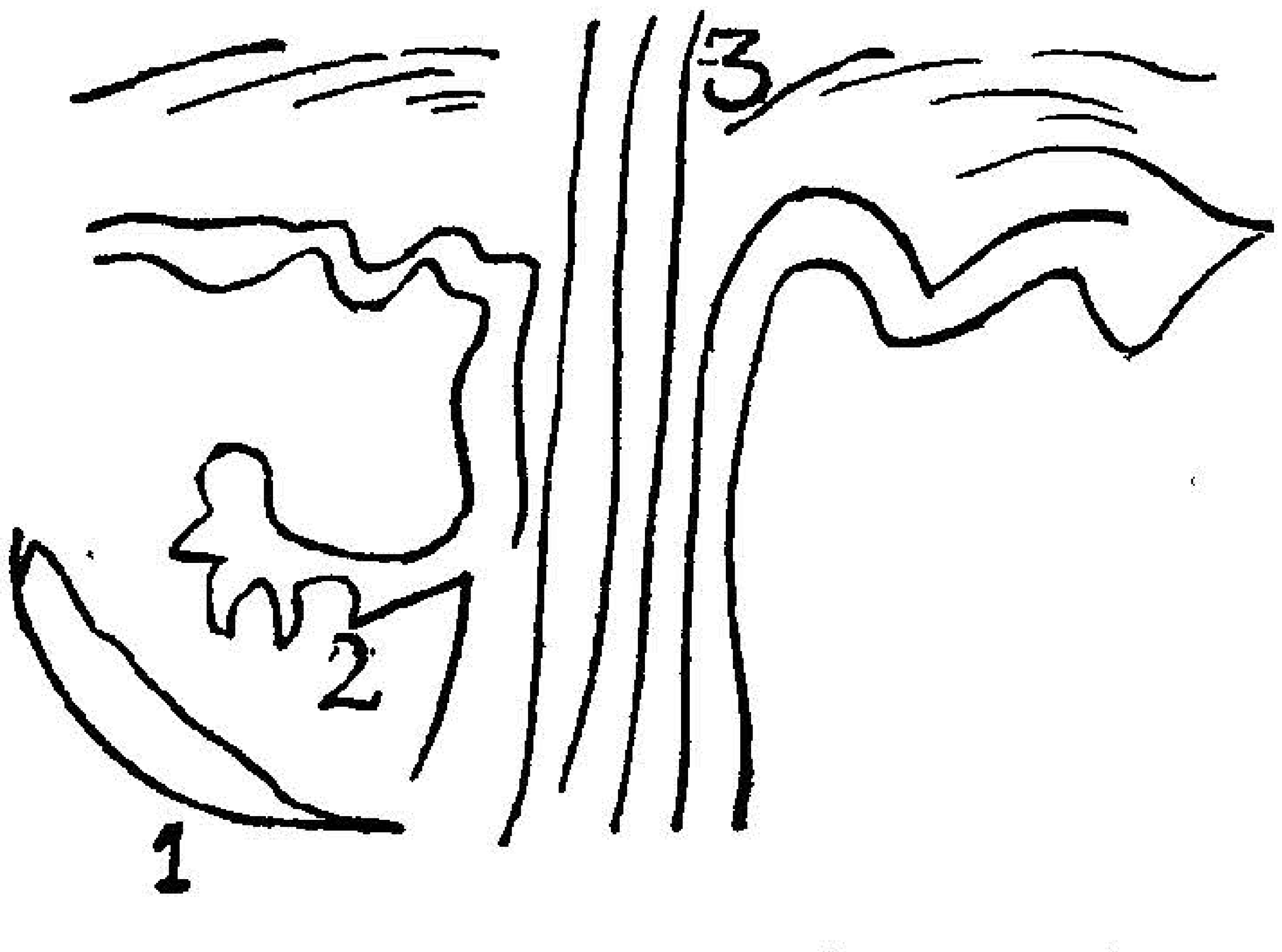
3. Lunule

4. Cuticle

HAIR



1. *Longitudinally arranged fibres.*
2. *Circularly arranged fibres.*
3. *Basement membrane*
4. *External root sheath.*
5. *Keratogenous zone.*
6. *Internal root sheath contains Henle's layer, Huxley's layer and cuticle cells.*
7. *Cuticle cells of the hair.*
8. *Medulla.*
9. *Superior portion of the bulb.*
10. *Inferior portion of the bulb.*
11. *Papilla: It contains a single capillary.*



Epidermis : The hair and the relation of the sebacious gland.

1. *Arector pili muscle.*
2. *The sebacious gland.*
3. *The hair.*
4. *The epidermal layers.*

The Glands of the skin : They are (*a*) The sebacious glands, (b) The sweat glands (1) Apocrine (2) Accrine glands.

The sebacious glands provides a thin lipoidal film over the stratum corneum and the hair, thus retarding the evaporation of water from these structures. The sebacious gland has two auxilliary functions namely (*a*) the sebum provides a bacteriostatic and fungistatic agent because of the appearance of certain fatty acids, (*b*) The second function is to provide a dehydro cholesterol, the provitamin D.

The scalp and face contain the maximum number of sabaceous glands.

The development of the sebaceous gland is an individual variation. Some people have small underdeveloped sebaceous gland. Others may have numerous large glands producing greasy or oily skin. Large doses of Xrays reduce sebaceous glands activity.

No sebaceous glands are found on the palms and soles.

The sweat glands : The apocrine sweat glands are found in the ear canal producing earwax, in the eyelids (glands of Moll) in the axillae, in the nipples and anogenital region. The three sites where modified apocrine glands having different names are :

1. The ceruminous glands in the ear canal.

2. The glands of moll in relation of eyelids and

3. The mammary glands.

The lumen of the apocrine sweat is 10 times the size of the ordinary eccrine sweat gland. The apocrine sweat is under the control of the hormonal activity. The pituitary elaborates a hormone which acts on these glands. There are two

distinct phases in sweating viz. the sweat secretion and the sweat excretion. The sweat secretion is done by the glands and the sweat excretion is by the myoepithehal tubular elements.

The apocrine sweat secretion contains much solid residue principally proteins and carbohydrates and when this is decomposed by bacterial activity, an acrid odour results. The sweat responds to adreneri gic stimuli and sweating may be observed as a result of fear, pain, anger and sexual stimulation. Cholinergic drugs do not influence sweating. Heat does not influence apocrine sweating.

The Eccrine sweat glands are found over the entire body surface. The largest number are found on the forehead, palms and soles generally the sweat glands are found on the flexor surfaces rather on the extensor surfaces.

The chief function of the eccrine sweat gland is to provide evaporative cooling of the body. The eccrine sweat glands are important both from the stand point of general body physiology and as a significant contributor to dermatotogical diseases. The sweating may be induced by other than thermal stimuli. It may occur on the face due to gustatory stimuli or in association with visceral lesions. Emotional sweating is a common experience and is commonly localised in the palms and soles, and forehead.

Nerve innervation of the sweat glands : The sympathetic nerves that supply the sweat glands are cholinergic and not adrenergic. In support of this contention is the experimental proof that drugs that block sympathetic adrenergic fibre as priscol do not inhibit the thermal or emotional sweating. Atropine which blocks the parasympathetic cholinergic fibres inhibit both the types of sweating.

The principal dermatological significance that itching and malaria related to eccrine sweat gland is entirely pathologic.

Corium and Blood Vessels

The corium is composed of three parts:

(1) Cellular elements,

(2) Fibrous portion—(i) Reticular, (ii) Collagenous & (iii) Elastic

(3) Intercellular matrix.

The corium is the pathway for blood vessels, lymphatic and nerves.

Functionally the corium has the following roles :

(*a*) Protective.

(*b*) Supportive : Gives necessary support for the blood vessels.

(*c*) Storage : the corium is the immense reservoir of blood, electrolytes and water.

The cellular elements of the corium are :

(1) Histiocyte (macrophage)

(2) The fibrocyte (Fibroblast)

(3) The mastocyte (Mast cell)

The fibrocyte is the master cell that forms the collagen and ground substance.

The histiocyte is part of the great macrophage or reticulo end thelial system. This is the scavenger cell.

The mast cell releases in response to injury histamine and heparin with extreme dilatation of the capillaries and an outpouring of leukocytes and plasma from the blood stream and anticoagulant effects.

The two fibrous components collagen and elastin constitute almost the entire

corium. Collagen is the toughest and most resistant of all proteins. The elastic fibres furnish elasticity and support, though occupying a subservient role. A third type of structures the reticular fibres represent immature collagen.

The ground substance appears between the fibres of the corium and is derived from fibrocytes and contains proteins, electrolytes, tissues fluid and mucinous fluid. The two elements of the mucinous fluid are hyaluronic acid chondroitin sulphuric acid. The ground substance acts as a milleau for the transfer of nutrients and other substances.

The subcutaneous tissue acts as an excellent layer for the formation of fat. The subcutaneous tissues furnish excellent heat insulation and effective absorption of external shocks. The larger nerves, the blood vessels and hymphatics are found in this layer as also the eccrine and apocrine glands.

The Blood Vessels and Nerves of the skin.

The blood vessels are of importance in heat regulation.

The capillaries are designed for exchange of material through permeable membrane. Histamine causes enormous changes in the permeability of the capillaries.

The arterioles are the regulators of blood supply to the skin. The skin presents many arteriovenous anastamoses especially on the extremities. The arterioles receive nerve supply but not the capillaries and venules. All the nerves to the arterioles are of autonomous nervous system origin. The preganglionic fibres arise in the spinal cord and end in the sympathetic ganglia. The post ganglionic fibres arise from these and pass to the arterioles in the skin. The arteriolar wall is generally in a state of tonic contraction due to continuing neural impulses. Elimination of these impulses will lead to vasodilatation. In addition to stimuli from central nervous system the arterioles of the skin respond to local axonal reflex. This instead of vaso constriction produces vasodilatation. This is due to liberation of acetyl choline at the end plate.

The local chemical agents as histamine produces vasodilatation.

Triple response : Gentle stroking of the skin will produce triple response. This response consists of red line developing within 15 seconds due to the release of histamine which produces local dilatation of the arterioles. The second component erthema is due to reflex dilatation of the arterioles in the surrounding area. The third component wheal develops three minutes after injury and is due to transudation of fluid from the capillaries. This results from histamine release.

The lymphatic system in the skin is rich and serves as auxilliary circulatory system. They transport and filter large portion of the capillary transudate.

The nerves of the skin : Many nerves of the skin end in special type of end organs.

1. The Pacinian corpuscles are found in the palms and soles and pulp and fingers. These are designed to estimate deep pressure.

2. The organs of the Golgi are found in the Periarticular and tendinous tissue and determine slight pressure.

3. The Tackile corpuscle of Meissner are formed chiefly in the papilla between the dermis and epidermis of the skin and are found most numerous in the terminal phalanges of the fingers.

4. Touch cells of Marker and Ranvier are found in the epidermis especially on the abdomen.

The skin is the most extensive sensory organ. The impressions conveyed are :

1. Touch – conveyed by Meissners corpuscles.

2. Pain – This may be either a pricking type or burning type. Pricking type is a most clear cut type. It is carried by large medulated sensory nerve fibres. Whereas burning pain are conducted along the unmedullated sensory nerve fibres. The pain indicates the rate of damage about the terminal nerve fibres.

Another interesting feature is "Referred pain " which is the pain experienced as arising in skin which is perfectly normal, Here the pain is initiated by impulses which develop in visceral organs or internal lesions, which pass to the spinal chord and then are perceived by the cortex as arising in the skin of the same segmented level.

Itching : The immediate cause of itching is change of the surface tension between the prickle cells of the epidermis. The intense pruritis in jaundice is due to the presence of bile salt in skin producing a change surface tension. Itching is considered as a variant of the pain sensibility. The impulses travel in the anterolatesal column and are perceived at the cortical level.. Itching is the " bete Noitre ", which confront both the patient and the physician alike. The scratch reflex is a protective reflex.

The cutaneous nerves contain efferent motor fibres of the sympathetic nervous system to the arterioles, to the smooth muscles of the erector piliform system and to the myoepithelium found around the apocrine glands and to a less extent around the eccrine glands. The apacrine glands contain adrenergic fibres but eccrine glands contain both the adrenergic and cholinergic fibres.

Dermatological Alphabets

1. Macule is a flat circumscribed change in colour of the skin. The lesion is flush with the surface (*eg*) Measles, Scarlet fever.
2. Papule is a solid elevation varying in size from a millimeter to 5 m.m. (*eg*) Furuncle, acne, lichen planus.
3. A nodule is a solid elevation over 5 m.m. in diameter (*eg.*) Fibroma
4. Tumour is a large solid growth.
5. Vesicle is an elevated fluid containing lesion over 5 m.m. in diameter.
6. A bulla is an elevated fluid containing lesion over 5 m.m. in diameter.
7. A pustule is a circumscribed collection of pus.
8. A wheal is an evaescent special type of papule.
9. A comedo is a plug of secretion in a follicle.
10. A Burrow is a characteristic sign of an animal parasite (*eg*) Sarcoptes, Scabei.
11. The scales are loose horny fragments of stratum corneum.
12. Fissure is a crack in the skin extending through the upper cutis.
13. A scar is an extremely important finding in the dermis and is an evidence of distruction of the cutis. This is often seen in lupusvulgaris and lupus erythematosus.
14. Crusts are dried exudates and composed of serum and cellular detritus.
15. An excoriation is a linear traumatised area.
16. An erosion is a loss of epithelium down to the basal cell layer.
17. An ulcer is a breakdown of the basal cell layer.

Cutaneous mycology: The pathogenic fungi may be divided into two groups viz. (1) Superficial and (2) Deep mycosis.

The Superficial mycoses are divided into two groups: (1) Keratinolytic fungi and (2) Non keratinolytic fungi.

The Keratinolytic fungi or Ringworm fungi are divided into three great groups:

(1) The Tricophyton.

(2) The epidermophytan and

(3) The microsporon.

The human infection is contracted from infected animals or from other human beings. Certain species show a prediliction to human beings and are called anthrophilic and others are for animals called zoophilic. The anthrophilic type produces a curious non-inflammatory persistent type of ringworm. The zoophilic type produces a shortlived inflammatory type of ringworm and are accompanied by hyper sensitivity reaction. This allergic reaction could be tested by "Trichophyton test".

The ringworm fungi have three general (1) Trichophyton, (2) Epidermophyton and (3) Microsporum. The epidermophyton never invades hair. The Microsporum forms mosaic sheaths of small spores around hairs. The trichophyton are either endothrix (entirely within hair without external spores) or ecthorthrix the spores are in distinct chains and considerably larger than those of microsporum species. The fungus is outside the hair in the ectothris group. The following is a list of species of dermatophytosis;

I. **Microsporon**:

(1) Microsporon Audouni: This is anthrophillic and produces Tinea Capitis.

(2) Microsporon canis: This produces Tineacapitis and is zoophilic.

(3) Microsporon gypseum rarely produces tinea capitis.

II. **Epidermophyton** produces athletis foot and ringworm grovin. It does not affect scalp.

III. Tricophyton 1. Endothrix spceies.
2. Ectothrix species.

Endothrix species: These are:

1. Trichophysia schonlleini causing faous
2. Violaceum causing black dot — . Tinea capitis
3. T. Tonsgrans is the principal fungus causing Tineacapitis.

Ectothrix species: are uncommon causes of Tinea capitis but mostly affect the skin and nails.

Diagnosis of Ringworm infection:

1. Make a mount of the infected material in 10% solution of caustic potash.
2. Culture: in sabouraid dextrose Agar medium.

Ringworm Infection:

Ringworm of the scalp:

The species of Tinea capitis are:

1. Microsporum
   (*a*) Microsporon audouni.
   (*b*) Microsporon cani.
   (*c*) Microsporon Gypseum.
2. Trichophyton
   (*a*) Ectothrix
   (*b*) Eudothrix

Tinea capitis due to Microsporum audouni. The cardinal signs are broken off hairs and partial alopecia. By viewing with U. V. R. light through wood filter a bright green flourescence of the affected area can be made out.

During the early phases active borders and central scaly area is an important finding.

The principles of treatment are :

(1) Clipping hairs close and

(2) Applying antifungal agents.

The manual epilation of infected has been advised but this has a bad psychological value. The other procedures are epilation by

(*a*) X-ray therapy: This is safe when given by a competant therapist.

(*b*) Thallium acetate t 7 to 8 mgm per kilo of body weight is not without harmful effects and is better avoided.

The prophylactic methods are :

(1) Contact between sublings at Home is to be excluded.

(2) Exclusion of infected from public places.

(3) Prevent the common use of towels, combs and clothing.

Microsporum canis: is a zoophilic fungus and produces more inflammatory reaction and hence the inflammation has to be dealt with before treating the actual fungus.

Tinea capitis due to Trichophyton tonsurans: This fungus is anthrophilic The constant feature is a broken down hair. The margins are indistinct. Pruritis may be marked.

Skerion may arise either in microsporon or Trichophyton infection and is a single boggy swelling and resemble an abscess and many a time is incissed as an abscess.

Tinea Barbae : May be divided into 3 types.

1. Inflammatory type.
2. Superficial ringworm type and
3. Sycosiform type.

1. **Inflammatory Type** : This is due to Trichophyton and produces nodular boggy, exudative circumscribed tumifacious studded with pustules. The treatment is the application of the hot compress of 2% sodium sulphate. Loose hairs can be removed with forceps. Fractional dose of X-ray therapy is of value in reducing the inflammation. The othar applications are :

(*a*) 2% Gentian violet in water.

(*b*) 2% Brilliant green in water.

(*c*) Iodex.

(*d*) Castallanis fuchsin paint.

(*e*) Hydrocortisone ointment.

2. **Ringworm Type** of Tinea barbae: The characteristic feature are annular with central clearing. The treatment is the application of whitfield ointment.

3. **Sycosiform Type of Tinea Barbae**: This resembles purulent folliculitis. The measures are epilation by x-ray and hydrocortisone ointment.

(*Continued*)

* DIAGNOSIS AND MANAGEMENT OF BRONCHIAL ASTHMA

By

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SINCE the subject is vast, and the time is limited, I intend giving the routine followed in the Asthma Clinic by my unit staff Dr. Raju and others, under my directions. I am not entering into the differential diagnosis of Bronchial Asthma. For the proper institution of treatment aetiological diagnosis of Bronchial Asthma is essential. We divide our cases into :

1. Allergic type of Bronchial Asthma-extrinsic.
2. Infective type of Bronchial Asthma.
3. Psychological type.
4. A combination of any of the above types - where more than one factor is operating.

Allergic Type of Bronchial Asthma

(*a*) Family history of allergy.

(*b*) Personal history of allergy.

i. Past history-infantile eczema.

ii. Co-existing eczema.

iii. Vaso-motor rhinorrhoea, urticaria.

(*c*) Attacks come on after exposure to allergens.

i. Inhalents - house dust, pollen animal hair, feathers corns.

ii. Ingestants - milk, fish, egg, potato, dhal, beans, chocolate, drugs etc.

(*d*) Seasonal.

(*e*) Starts at younger age group and lasts for a period in one's life. Complications are few.

(*f*) Eosinophilia. 10—15%

(*g*) Positive skin test—Skin tests are not very reliable. The patient may give a positive skin test to more than one allergen. Those may not be responsible for the asthmatic attack. In a few cases by taking careful history the offending allergen can be determined. Treatment is simple in these cases-*i.e.* avoiding contact with allergen by removing the patient or the allergen. If this is not possible desensitisation has to be undertaken in gradually increasing doses. This desensitisation has to be periodically repeated to get lasting cure and the desensitisation has to be carried out prior to the season.

(*h*) Good response to Adrenaline.

(*i*) Antihistamines useful if taken early before exposure to allergen. In our clinic most of the patients are sensitive to house dust, dhal, egg and fish. The typical history of a patient who is sensitive to house dust—he or she often gets an attack when he or she dusts the room or enters a dusty atmosphere starts sneezing running through the nose, dry cough, cough with expectoration, asthmatic attack, then fever. These patients get gratifying relief if they avoid dust or take antihistamines before exposing

* Lecture delivered at the Trichy Branch of I. M. A. on 19th July 1958.

themselves to dust. Adrenaline during the attack and Penicillin for fever.

Infective Type-Intrinsic Bronchial Asthma-Non Specific.

(*a*) A focus of infection in the body—sinus, tonsil, throat, Broncho pulmonary infections, Bronchiectasis, Tuberculosis.

(*b*) Repeated attacks of fever followed by asthmatic attacks.

(*c*) Starts at a later age group after 35 years.

(*d*) Fever, copious expectoration, leucocytosis.

(*e*) Persists all through the year–the relief obtained in between the attacks is not complete.

(*f*) Complications like Emphysema, Corpulmonale are common.

(*g*) The outlook is not bright.

(*h*) Responds well to antibiotics.

(*i*) Removal of the source of infection during the quiescent stage may or may not be fruitful. The earlier it is removed the better is the result.

(*j*) Expectorants like Iodides, Ammonium chloride are useful.

(*k*) Larger doses of adrenaline are required to control the attack in presence of infection similar to (increased insulin requirement in presence of infection)

(*l*) Diamox to relieve the pulmonary congestion to inhibit the carbonic unhydrase and thus reduce the respiratory acidosis Vitamin E to lessen tissue Oxygen requirement.

Psychological Type.

(*a*) Emotional reaction of the patient like anxiety, worry.

Examples. Impending examination to a student, interview to a youngster seeking employment, business anxiety to a top ranking businessman, uncongenial surrounding to a young lady–mother–in–law's house–are a few quotable quotes.

(*b*) The attacks come on when there is emotional stress. (*c*) Health is perfectly normal in between the attacks. (*d*) The severity of the attack is proportional to the anxiety and worry. (*e*) Sedatives are very useful—Barbiturates, Largactil.

Combination of Factors.

Here more than one factor is operating. Success of treatment depends on the personality of the doctor and his judicious combination of the required drugs in proper proportion - a good mixture of treatment.

General Advice.

1. Avoid marriage between asthmatic families and families with allergic manifestations.
2. Keep up the general health. If poor B_{12}, 500 micro grams twice a week–ten injections repeated at regular interval of 3 to 6 months. This will often cut down the number of attacks and tone up the run down condition.
3. Diet. Regular habits. Avoid known allergic foods. Light night meal before 7 p.m. Rice or starchy food to be avoided at night to prevent distention of the abdomen and respiratory embarrassment. Avoid dietic indiscretion. An asthmatic who over eats will pay the penalty of the nocturnal attack.
4. Respiratory infection is to be avoided if possible or to be treated energetically with antibiotics at the very outset - more so in the case of children. Respiratory

tract irritants like smoke, dust to be avoided. The value of air conditioning for those who can afford it cannot be overstressed.

5. The patient should be taught to seek medical aid at the very beginning of the attack. A successful doctor ought to impress his patients about the need for early aid. Nowhere is it true in medicine more than here that a stitch in time saves nine.
6. Regular breathing exercises to improve the vital capacity.
7. Avoid overwork, sudden variation of temperature, late nights.

There are about 256 drugs used in the treatment of Bronchial Asthma. Hardly I can run through them in this short time. Confining myself to the drugs used by me in the clinics, let me take first the most commonly used drug.

Adrenaline Hydrochloride 1/100

1. As a spray useful in the early stages of asthma. Good effects in psychological types. Absolutely useless in infective types.
2. Sublingnal administration of Isopropyl noradrenaline useful in a small proportion of cases – the main advantage being the patient can spit it out if untoward symptoms appear thus preventing further absorption.
3. (*a*) Subcutaneous injection 1/1000, 2–8 mms. can be repeated at the end of half an hour. Blood pressure record will be a good guide for repeating the dose. Hurst method one minium a minute upto 120 miniums in status asthmatics.

   (*b*) Adrenaline in oil for prolonged action.

   (*c*) Intravenous, 2 to 4 m.m. given slowly in status asthmatics.

Note. Regular use of adrenaline, the patient may not get the desired effect. Entirely antagonistic result may be obtained known as Autonomic Rebound. Larger doses of adrenaline are required in presence of infection.

Side effects. Headache, palpitation, sweating tremors.

Dangers. If given by mistake to hypertensive cardiac asthmatics instantaneous deaths have occurred. It is needless to stress the importance of taking blood pressure in asthmatics coming under your care.

Ephedrine Hydrochloride, not useful in an acute attack. Useful when taken in the presence of premonitary symptoms and in milder attacks.

Side effects. Insomnia, retention of urine. Ephedrine is often combined with barbiturates.

Aminophylline :

1. Oral not very useful. Since it is a gastric irritant, it is combined with aluminium hydroxide or neutral aminophylline (Deriphyllin-N), is used now a days.
2. Intramuscular—is painful. Deriphyllin-N is not painful. (2 mc).
3. Intravenous gives good result for a few hours. When in doubt whether it is cardiac asthma or Bronchial asthma the drug of choice is Aminophylline or Deriphyllin. Danger a rapid injection may end in sudden death.
4. Rectal as a suppository given at bed time averts a nocturnal attack. Highly commended by the American authors and found useful in our clinics. We combine it with Barbiturates.

Barbiturates. Used as a sedative in psychological and allergic type of

asthma. It counteracts the ill effects of Ephedrine and enhance the action of Aminophylline. Used in small doses of ½ gr. t. d. s. Not useful in infective types. To be used with care in presence of emphysema.

Side effects. Drowsiness, headache and lack of initiative. Incidence of headache can be reduced by using the sodium salt of the Barbiturates.

Largactil. A tranquilliser extensively tried in the asthma clinic at General Hospital. Useful in psychological types and to a certain extent in allergic types. 10 mgs. twice during day and 25 mgs. at bed time. Disease of the liver is a contraindication. Not useful in infective types. Useful in cardiac asthma.

Paraldehyde. Oral not useful. Per rectum 4 drams in 4 ozs. of starch emulsion as a retention enema is useful in psychological and allergic types. Copious expectoration is a contraindication.

Intramuscular 4—8 mls.
Intravenous 2—4 mls. in status asthmaticus.

Ether. 100 to 150 ml. with equal quantity of Olive oil as a rectal drip.

Antibiotics. Penicillin 5 lakhs B.D. or broad spectrum antibiotic 1 to 2 gms. per day. Useful in infective type of asthma and in presence of superadded infection in the other types.

Antihistamines. Cause Bronchial spasm. So it will aggravate an existing attack. But if given early, before exposure to the allergen it will ward off the attack. We have found it useful in patients who start sneezing in the early hours of the morning. One antihistamine tablet at bed time ensures good sleep and prevents the sneezing and subsequent asthmatic attacks.

A. C. T. H. and Cortisone. Useful drugs of modern times. To be used with care in intractable cases of asthma and status asthmaticus.

Oral Cortisone, Deltacortisone, Hydro-cortisone and its derivatives Prednisolone. Cortisone is given 300 mgs. a day. Prednisolone 20 mgs. a day to start with, then gradually tail it off. Usually given for 10 days but modern tendency is to give maintenance dose of deltacortisone 2·5 to 5 mgs. over longer periods of years, with Diamox as and when required.

A. C. T. H. Intravenous 40 to 80 units per day gradually reducing it to 20 units per day upto 10 days. Or A. C. T. H. gel 80 units intramuscular gradually tapering to 20 units per day. Useful in allergic types of asthma with no complications, in infective types of asthma with no complications. In infective types of asthma and in presence of emphysema, the results are not gratifying.

Dangers. Lighting up of an old healed tuberculous lesion masking of infection, silent duodenal perforation, hypertension.

Expectorants. Iodides and Ammonium Chloride are useful in cases where thick mucous aggravates the existing respiratory difficulty. A night dose of this is better avoided because the induced cough will disturb the sleep. Iodine sensitivity may be a handicap.

Pethidine hydrochloride. This drug is widely replacing morphine. Used with great caution it is a powerful remedy for status asthmaticus. Unfortunately it is a habit forming drug. Medical men are no exceptions to its evil effects.

Personally I give stray injections to asthmatics without their knowledge. On no account should a prescription be handed over to the asthmatic.

Khellin. A broncho dilator and vaso dilator was in the field for a short time. The undesirable effects are more than the benificial ones.

Papaverine hydrochloride is useful only when given as an intravenous injection. Oral and intramuscular medication are not of much use.

Atropine. Often used along with Adrenaline. It is going out of vogue. The dry skin in a tropical country like ours gives an uncomfortable feeling and the dried up sputum is difficult to expectorate.

Calcium Gluconate. for psychological effect. 50% Fructose or Sucrose as an intravenous injection often relieves the headache associated with asthmatic attack. Nicotinic acid, Grindilea, asthma cigarettes auto vaccines can only be mentioned with no recommendations.

Drugs contra-indicated. Morphine, aspirin and any drug to which the patient has been found hypersensitive. Ether and chloroforms as general anaesthetics.

Serum should be used with care.

Oxygen. Great care must be exercised in administering oxygen to asthmatics. Intermittent oxygen therapy or oxygen under intermittent positive pressure is recommended.

Alevaire. An aqueous detergent along with isopropyl–nor adrenaline is found to be useful.

Since it is impossible for me to exhaust the list let me conclude by saying an asthmatic must learn to live with his asthma. It is better managed than treated. Each asthmatic is a law to himself. The reputation and the personality of the physician plays an important role in the management of Bronchial Asthma.

Erratum (Sept. '58 issue.)

Page 68 under heading (E) please read "extensive" for "expensive".

Page 80 under conclusion please read "Trachetomy Set" for "Tracheotomy".

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3 -NOV 1958
MADRAS

* FAMILY PLANNING

By

Dr. P. PANKAJAM, M.B.,B.S., D.M.C.W.,
State Family Planning Officer, Madras.

THE Planning Commission while formulating the First Five Year Plan stated that "Increasing Pressure of Population on natural resources (which must inevitably be limited) . retards economic progress and limits the rate of extension of Social Services, so essential to civilised existence. A population policy is therefore essential to planning".

The seriousness of the population problem has been reiterated in the Second Five Year Plan by the Planning Commission.

The Family Planning programme is directed to (i) the building up of an active public opinion in favour of Family Planning (ii) the extension of Family Planning advice and service (iii) the establishment of centres for training sufficient number of persons for undertaking Family Planning work and (iv) the promotion of medical, biological and demographic research.

The main objective of the Family Planning programme of the Government of India is not merely to propagate "Birth Control" as it is commonly known as. It is stabilise the population at a level consistent with natural economy.

Family Planning:

1. Helps parents to plan their families and have children by choice and not by chance.
2. Saves mothers from the risk of frequent and uncontrolled conception.
3. Removes constant dread of unwanted pregnancies.
4. Ensures health of children and mothers.
5. Promises happiness of the family.
6. Builds a happy, vigorous and prosperous nation.

Family Planning is not an irresponsible way of life. Its purpose is to promote, as far as possible, the growth and harmony of the family as a responsible Unit of society.

Family Planning not only includes limitation or spacing of children but also such other measures as may be necessary to promote the welfare of the family, such as advice on preparing the young for responsibilities of marriage and parenthood, infertility, eugenics, sex education marriage guidance, etc. Most family Planning centres, however, give advice on limitation and spacing of children as it is the most pressing problem of the day.

It has been said that Family Planning will increase immorality amongst the people. The morality or immorality of Family Planning depends on the motive. One cannot blame Family Planning because a minority abuses the knowledge of Family Planning and this minority will always to exist whether Family Planning exists are not.

Promiscuity is common amongst the people in the lowest rungs of society and our propagation of Family Planning is not going to increase it. On the other hand, Family Planning may help to the number of illegitimate babies, reduce criminal abortions amongst married and unmarried mothers, and bring down the

* Lecture delivered at Trichy Branch of I. M. A. on 23rd January 1958.

number of cases of infanticide. Family Planning thus becomes a measure of social reform also.

From the economic point of view, it is a well known fact that our food production is not keeping pace with reproduction. Our standard of living is so low, that any addition to the number of poor families may well be disastrous. Sickness and disability will result with consequent national decay, for the sick and the disabled are a burden to the nation and a drain on national wealth. All programmes to increase food production and raise the standard of living are nullified or frustrated by the increasing growth of population.

The population of this sub-continent was about 100 million in the 16th Century. In 1871, when the first regular although incomplete census was taken the

population stood at **254** million	This is for undivided India.
In. 1931, it was ... **353** million	
In. 1941, it was ... **389** million	

In 1951, it was **362** million for India after partition—Population in 1941 of this area was 314 million.

This shows that the population has increased by 13·4% in the last 10 years, and in the last half a century, the population has grown by more than 50%. This works out to about 5 million net addition every year. This net addition of about 5 million a year or 50 million in a decade need not constitute a problem for us, if every man, woman and child enjoyed the irreducible minimum requirements of decent human existence in terms of food, clothing, shelter, education, employment, health etc.

The population has responded to the presence or absence of wars, famines and epidemics. As these checks appeared or disappeared the population declined or increased accordingly. Voluntary limitation of births has not played any part in determining the size of the Indian population.

The great statesmen of the World are trying their best to prevent another global war; famines, floods and epidemics are being fought with increasing success; so that these checks on population are tending to disappear. The results are obvious. Population continuous to increase by leaps and bounds.

And as the famous historian *Arnold Toynbee* said the population problem is the gravest that will be confronting us in the near future and that it may well be the one on which our civilisation founders in the end. This fear was expressed as early as 1798, by a young clergyman *Thomas Malthus* by name. This clergyman had been studying the growth of population in England and came to the conclusion that it tended to double every 25 years. The food supply, however increased at a much more *pedestrian* rate. If this continued, it was obvious that at some point there would not be enough food to sustain the population and the excess would die of hunger or pestilence. The only alternative would be the postponement of marriage and the exercise of a greater degree of continence within marriage, then had hitherto been practiced. Malthus of course, never believed in contraception. Thus it seemed that humanity's reproductive ability would in the end triumph over its productive ability.

The dire predictions of Malthus however did not materialise in the 19th or 20th Centuries. Population grew rapidly, of course, but the standard of living in all civilised countries, nevertheless improved also. Science armed with steam and steel, was conquering the resources of vast new areas of the earth, and all the whispered fears of over-population were

drowned in the hubub of industrial progress. Further, the opening up of new lands for settlement in the Americas, Australia, New Zealand, and the creation of overseas colonies in the East, eased the pressure of population at home and provided additional sources of food.

There even arose some talk of the opposite disaster viz., race suicide, as people voluntarily began to limit their families.

But in under-developed countries like India, Malthusian theory may well apply. In spite of all the five year plans, we are apparently caught in a race between productivity and reproductivity. The improvement or deterioration in our standard of living in the years to come is going to depend on the outcome of that race. Why, even our very survival depends on that.

More than half the people of the world and many more than that in India are under-privileged; they are underfed, poorly housed, receive little modern medical care, and are inadequately educated. It is difficult for men with empty stomachs to know right from wrong. They are easily stirred to rebel by power hungry demagogs. Experts say that the pressures resulting from rapidly growing populations are, without the slightest doubt a major cause for the great majority of conflicts between nations.

If the present knowledge of scientific agriculture were applied on a World wide basis hunger could become unnecessary. But there are economic, political and social problems which make this, application enormously difficult, in a world divided into conflicting nations.

In the time required to increase food production sufficiently to feed more than 360 millions adequately, there will unfortunately be many more than that to feed. By adequately is meant to provide a minimum of 2,400 calories per capita. Food production must therefore more than catch up with the present needs. More land must be brought under cultivation and yields must be increased. This means more fertilisers, more water for irrigation, and more plant and animal breeding. The food of the oceans will have to be harvested in increasing amounts and the practicability of entirely new methods of agriculture, will have to be explored. All this will require more technology and extension of industry. The general level of education also will have to be raised. In order to change agricultural procedures, the attitudes and beliefs of our people will have to be changed. And attitudes and beliefs, change slowly, over generations rather than over years.

Vital Statistics.

Birth Rate : During the decade 1941–50 the average Birth-Rate was 40 per 1000. The actual recorded rate for the decade is much lower than this figure (it is 27·2) because of the inadequacy of Indian vital statistics.

Birth Rate for United Kingdom and United States of America are 15 and 24 respectively.

The Death-Rate for India was 27 during the decade 1941–50.

Death Rate for United Kingdom and United States of America are 11 and 9 respectively.

During the decade 1901–10 Indian Birth-Rate was 48, and Death-Rate was 42. It will be seen that during the last fifty years, the Indian Birth-Rate has not shown any significant decline whereas the Death Rate has shown a considerable decline, with the result that the population is growing at a tremendous rate. They say

that of all the demographic factors, *the rate of fertility* is more important than BirthRate in assessing the growth of population. The fertility rate represents the number of female children born each year per 1,000 women between 15 and 45 years of age. Specific fertility rates give a more accurate picture of the population situation. The specific fertility rate represents the number of female children born in a year per 1,000 women of a given age. But unfortunately these figures are not available for India. However even if the number of children both male and female born to a woman during her reproductive span is available, it will be of some use. The 1951 census collected some information on these matters in Travancore, Cochin State. It was found that the average Travancore–Cochin mother who had completed her reproductive period and was alive at the time of the census had 6·6 children of whom 2 had died before the census and 4·6 alive at the time of the census. We assume that this is true of all India if not worse as regards infant and child mortality.

Fertility Rate is lower for the higher income groups over a long period of time. These enjoy a higher standard of living, are better educated and better employed than the lower income groups.

The factors tending to high fertility are

1. Early marriages
2. Lower mortality rates
3. Promotion of widow re-marriages.
4. Illiteracy.
5. Poverty.
6. Ignorance of Family Planning.
7. Social Stigma attached to barren women.
8. The need for a son in Hindu Funeral ceremonies.
9. The economic value of children in rural areas.
10. The desire to keep land in the family.
11. The universality of marriage.
12. The belief that children are God given.

The Infant Mortality Rate in India is one of the highest in the World. It has ranged from 116 per 1,000 live births, (the lowest recorded) in 1951 to 261 the highest recorded in 1918.

Infant Mortality Rate for United Kingdom in 1951 was 30.

Infant Mortality Rate for United States of America in 1951 was 29.

Roughly about 50% of the total mortality in any given year is among children below 10 years, in India. The reasons behind the enormous wastage of infant life include frequent ill advised pregnancies, malnutrition and low vitality of the expectant mother, and absence of ante-natal care. I. M. R. is more important than D. R. in measuring a Nation's welfare. Infant Mortality Rate is conceded to be the most sensitive index of a nation's social welfare services, Public Health, environmental hygiene, and efficiency of other services. Our Infant Mortality Rate high lights just how backward we are in respect of all these things.

Maternal Mortality Rate in India is about 25 per 1,000 births that is about 25 mothers die out of every 1,000 mothers in child birth or 2,00,000 mothers die every year in the process of bearing children. The corresponding rates in United Kingdom and United States of America are between 2 and 3.

In spite of the high mortality rates, the average annual addition to the population of India, continues to be more than 4 million. During the last two decades however there has been a tendency for

the mortality rates to go down, thanks to the availability of wonder drugs, improvement in sanitation and puplic Health, better medical care and increase in the number of medical and nursing personnel. It has been calculated that imparting of some training and knowledge in clean midwifery to the dais i.e., indigenous midwives and some improvement in environmental hygiene can save about 3 million more infant lives. When these are effected India's population will increase by about 8 million every year, instead of 4 or 5 million. It is therefore obvious that bringing down mortality rates without a corresponding decrease in the Birth-Rate, will only have depressing consequences on Indian economy.

Social and Economic factors:

"The population problem in India would be very different if the social institutions of *early marriage*, the *universality of marriage* the *Social ban on widow remarriage* the Hindu joint family and other institutions and attitudes resulting in high Birth rate and a sex ratio in favour of males, did not exist." (Dr. J. Chandrasekhar).

Although child marriage is an offence according to Indian Law, the 1951 census revealed that there were 28,33,000 married males, 61,18,000 married females, 66,000 widowers and 1,34,000 widows, all between the ages of 5 and 14. Out of every 100 girls, aged 15 or over only 6 were unmarried, while among 100 males aged 15 and over, 20 were unmarried. Early marriages are the rule, particularly in rural areas, where girls are married before or soon after puberty. They begin bearing children early and go on throughout their reproductive span, with the result they are depleted of all their energy and vitality, and even meet with a premature death. Infant and maternal mortality are especially high in rural areas.

The second factor is the universality of the married state. Marriage is almost a religious duty. Economic security is usually not a pre-requisite to marriage and neither has an individual any freedom in the choice of a partner. There is nothing to stand in the way of marriage, and sooner or later every one is married.

When education becomes more universal than it is today. men will come to realise the importance of economic security, strive for social and personal advancement and perhaps postpone marriage until such time.

A third factor is the paucity of females. Various reasons have been put forward for this, but be it what may, the resulting sex ratio in favour of males, keep up the custom of early marriage for girls.

The social ban on widow remarriage is another feature of Indian society. The result is that men, once widowed, have to marry girls much younger than themselves; chances are such girls are widowed and cannot remarry. This practice of "Socially sterilizing" widows as Dr. S. Chandrasekhar puts it, increases the disparity in age between husbands and wives and keeps up the custom of early marriage for girls.

As Regards our standard of living the less said the better. Our per capita consumption of food is only 1,700 calories whereas it ought be at least double that.

Our per capita consumption of cloth is less than 17 yards.

Our overall literacy rate is only 15%.

Our per capita national income is Rs. 250/- whereas that for United Kingdom and United States of America is Rs. 3,919/- and Rs. 5,634/- respectively.

Millions of people have no proper housing: they exist in miserable hovels or on the pavements.

We are unable to meet our total educational, health and other needs.

For a population of 370 millions, the total land area available is 813 million acres; whereas in United States of America where the population is only 151 million, the total land area available is nearly 2,000 million acres.

Available Agricultural area per capita for India is 97 cents.

(100 cents — 1 acre)

United States of America — 741 cents.

As population grows, the per capita holding declines due to sub-division of the land as a result of it being divided amongst the sons. Indian methods of agriculture are very primitive and this sub-division of land makes it impossible to adopt modern methods of farming. This is one of the reasons for the poor yield per capita, as compared with other countries.

Industrialisation is often said to be a remedy for the population problem. But in India, though industrialisation has been going on slowly for the last so many years, the population pressure has not been eased. According to the 1951 census only 10·5% of the total population was supported by industry. The Planning Commission is of the opinion that only rapid and large scale industrialisation can help.

Migration : The average density for all India is 303 persons per square mile, according to 1951 census. Indians are not prone to migrate, even within India, as proved by many a census report, the exception being the exodus of large masses of people after partition. This is because of the mainly agricultural nature of the nation. Even though there are certain areas like Assam, where the density is low, migration is not popular. There are other reasons also, like the diversity of castes and creeds and languages, which militates against any movement.

External migration or emigration offers no solution. No other country is willing to open its doors to Indians. Besides it is impossible for other countries to absorb all the surplus population of India, even if they were willing.

Some 35 years ago, John Maynard Keynes in his (Economic Consequences of Peace,) wrote "The time has already come when each country needs a considered national policy about what size of population whether larger or smaller than at present, or the same, is more expedient and having settled this policy, we must take steps to carry it into operation".

As regards India, the Planning Commission suggests the necessity of reducing Birth Rate so as to stabilize the population at a level consistent with the requirements of national economy. But it stops there. No specific targets are laid down in the Plan. *The Census Commissioner*, however picks up the thread where the Planning Commission leaves it, and sets a definite maximum limit the population can be allowed to grow. He says the number of births should be limited so that they do not materially exceed the number of deaths and a stationary population can be achieved before our number exceeds **450** millions. In other words, "a childbirth occurring to a mother who has already given birth to three or more children of whom at least one is alive, is *improvident maternity*" and its incidence should be reduced from its present level of over 40% to under 5% within 15 years. The Census Commissioner proceeds to say that whether a couple can afford it or not, the nation cannot, and therefore even if the mother's health permits, a fourth child birth should not be allowed to occur.

In England to day the number of children born every year for 1,000 people, is only 15. Out of this number 6 are first born, 5 are second born, 2 are third born and fourth born are still less.

In India, out of 40 children born every year for 1,000 people, the number of children who are fourth born or of a higher order, is 17.

The small family pattern is the order of the day in England; about 75 years ago, the average number of children born to a woman before she completed 45 years of age, was about 6, in United Kingdom. Now, it is only 2·4. The Census Commissioner prophesies a complete breakdown of our economy if we do not launch on a determined drive to eliminate "Improvident maternity" and reduce the birth rate from 40 to 23 so as to keep our numbers stationary at a level of 45 crores.

A population survey conducted a few years ago by the Government of India in Mysore and Calcutta revealed the changing attitude of the people towards the size of the family. There is a growing desire to limit their families to about 3, for various reasons (both in the Urban and Rural Population). But absence of precise knowledge of Family Planning methods and other environmental conditions makes it impossible to achieve this. The result is the birth of a large number of unwanted children and/or abortions, with all their crippling effect on the mother's health. Other Surveys conducted in Baroda, New Delhi, Lucknow and Poona revealed the same anxiety to limit their families.

Therefore it is that our Government have taken on the responsibility of providing free F. P. Service and advice to the teeming millions of our country who are so badly in need of it.

Family Planning Technical Aspects:

The various methods of Family Planning may be divided into (i.) Appliance and Non-appliance methods, which are temporary, and (ii.) surgical methods which are permanent.

The Government of Madras are in favour of the non-appliance and surgical methods only. By non-appliance method is meant chiefly the safe period method.

This method is based on the fact that (i) ovulation takes place only once during the menstrual cycle about the middle of it (ii) the ovum survives for about 48 to 72 hours. (iii) Spermatoza retain their their capacity to fertilise the ovum for about 48 to 72 hours. On the basis of these facts it is found that a woman is most fertile from 2 to 3 days before ovulation to 2 to 3 days after ovulation. But it must be remembered that chances of conception probably exist at all times and that a woman may ovulate twice in a month, or any time during the month.

If the exact time of ovulation can be determined in a woman, it is possible to fix exactly her fertile period. Since this is not possible in most women, the only thing to do is to fix a sufficiently long fertile period, and specify the range of menstrual cycles for which they may be applied safely. A general working rule for women whose menstrual cycles vary from 27 to 34 days is (i) the after menses Safe Period ends on the Second menstrual week day, (the first menstrual week day being the day on which menstruation first appeared) (ii) the before menses Safe Period begins on the 4th menstrual week day and continues till the on-set of the next menstruation.

The 13 days between the second menstrual week day and the 4th menstrual week day constitutes the fertile period.

This method should be reliable for most women, in normal health, whose

menstrual cycles range from 27 to 34 days, and are not unduly irregular. But this method should not be advised when another pregnancy is definitely contra-indicated for any reason.

This method can be combined with Coitus Interruptus during the fertile period. It is then known as Elementary Precaution method.

If spermicidal tablets are used during the safe period, this method affords more protection.

Elaborated Safe Period is only for educated people who can use the calendar.

Permanent Methods : Vasectomy and salpingectomy are permanent methods which are relatively simple to perform and safe. The Government of Madras advocate these methods.

UNICHEM LABORATORIES

BOMBAY - 26.

FERO-B-LIVER	Each 30 ml. Contains :		
	Ferrous Gluconate	U. S. P.	200 mg.
	Ferrous Chloride		80 mg.
	Vitamin B 1	B. P.	10 mg.
	Vitamin B 2	„	1·5 mg.
	Niacin	„	75 mg.
	Vit. D (Calciferol)	„	2000 I. U.
	Calcium Hypophosphite	B.P.C.	1 gm.
	Proteolysed Liver (equivalent to 28 gms. of Fresh Liver)		
UNI-B-TWELVE FORTIS INJECTABLE 500 mcg. per ml.	Vitamin B 12 Cryst B. P. (Cyanocobalamine)		500 mcg. per ml.
	Preservative Benzyl Alcohol	B. P.	2%
UNI-B-TWELVE FORTIS INJECTABLE 100 mcg. per ml.	Vitamin B12 Cryst B. P. (Cyanocobalamine)		110 mcg. per ml.
	Preservative Benzyl Alcohol	B. P.	2%

For Further Particulars, Please Contact :—

Agents : **M/s. Ganapathy & Company,**

103/104, Linghi Chetty Street, MADRAS-1.

OBITUARY

DR. V. IRAVATHAM.

(1902—1958)

Passed out from Royapuram Medical School in 1923. In the same year, he proceeded to Burma to begin his active and venturesome medical career at Rangoon and lower Burma. He returned to India in 1933 and set up private medical practice at Tiruchirapalli and became one of the earliest members of the I. M. A. Tiruchirapalli Branch.

His ablitiy to foresee things made him start one of the first well equipped private clinical laboratories to be set up in South India in 1937 at Tiruchy itself. He took his diploma in Clinical Laboratory Science in 1939 from Madras and his acute thirst for knowledge goaded him to qualify for D. T. M. from Calcutta as late as 1945. In answer to pressing needs from other places, he started branches of his laboratories at Kumbakonam (1952), at T. Nagar, Madras (1954) and at Triplicane, Madras (1958).

Even the cruel hands of Death cannot deprive the medical faculty of his services since he leaves behind him all the above well established Laboratories, always placed at the services of the Medical faculty.

He is survived by his wife, a daughter and four sons.

ASSOCIATION NEWS

CHINGLEPUT BRANCH

A meeting of the Association was held on Saturday the 18th October 1958 at Venugopal Club, Chingleput.

Dr. R. V. Rajam, M.S., F.R.C.P., F.R.S., Director, Institute of Venereology, Govt. General Hospital, Madras delivered a lecture on " Are Venereal diseases dying".

* * *

The general body meeting was held on Saturday 27th September 1958 at the St. Joseph's High School Hall, Chingleput, Dr. K. R. Ganesa Mudaliar, president of the association presided.

The following office - bearers were elected for 58–59.

President : Dr. K. R. Ganesa Mudaliar.

Vice-President : Dr. P. K. Varghese.

Secretary & Treasurer :
Dr. A. Sundararaja Rao.

Members of the executive committee :

1. Dr. B. K. Shenoi.
2. Dr. A. N. Jagadesan
3. Dr. K. Vittal Doss Pai
4. Dr. T.K. Thayumanava Mudaliar

Representative to the Central Council :
Dr. P. K. Varghese.

Representative to the Provincial Council :
Secretary
Dr. P. S. Ananthanarayanan
Dr. P. K. Varghese

Dr. N. Vaidyanathan M.D. 1st physician Stanley Hospital, Madras, dealt exhaustively on "Dyspuoca and its management".

* * *

The general body Meeting of the Association was held on Saturday the 23rd August 1958 at the Chingleput Venugopal Club, Chingleput.

Dr. Ratnavelu Subramaniam M. D., M.R.C.P. (LOND.) delivered a lecture on " Drug therapy in Hypertension ".

1. Election of two Vice-President to I. M. A. Madras State Branch was held.

COIMBATORE BRANCH

A meeting of the Association was held on 19th July 1958 in the Association premises. Dr. T. V. Sivanandam, MBBS., MLC., President presided.

A condolence resolution was passed on the sad demise of late Dr. M. R. Gurusami Mudaliar.

Then there was election of One President and Three Vice-Presidents of the I.M.A. Central for the year 1958–59.

Dr. S. Sri Ramachari, MD., Pathologist, Nutritional Research Laboratories, (I.C.M.R.), Coonoor, gave a lecture on ' Nutritional Factor in experimental Dietory Cirrhosis of the Liver.'

ERODE BRANCH

A meeting of the Association was held on Tuesday the 22nd of July '58 with Dr. T. S. Bhaskaran, the President in the Chair.

Dr. P. K. Kalyanaraman spoke on "Practical Management of Hypertension".

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The Annual Meeting of the Association was held on Saturday the 6th of September 1958, in Sengunthar High School, Erode.

Dr. K. P. Ganesan, M.D., Reader in Medicine, Kasturba Medical College and Hon. Physician Govt. Wenlock Hospital, Mangalore, delivered a lecture on " Prolonged and Perplexing Fevers ".

Then Dr. K. A. Kalyanam, F.R.C.S., (E) D.M R., Honorary Surgeon, Govt., Erskine Hospital, Madurai, spoke on " The Problem of Peptic Ulcer.

MADRAS CITY BRANCH

A Special General Body Meeting of the Association was held on Monday the 18th August 1958 at Madras Medical College when election of two Vice-Presidents to the State Branch for the year '58–59 was held. A Reception Committee for holding the 13th Madras State Medical Conference 1958 at Madras was formed.

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A meeting was held on Monday the 25th August 1958 at the Madras Medical College, when Dr. Sathyanarayana M.B., M.S., D.L.O., F.I.C.S., F.C.C.P., (Professor, Ear, Nose, Throat Surgery, Madras Medical College, Ear, Nose, Throat Surgeon, Govt. General Hospital, Madras) delivered a lecture on "Recent Advances in Otological Surgery".

MADRAS STATE BRANCH

Minutes of the meeting of the Council of the Madras State Branch of the Indian Medical Association held at "Sethu Castle", Courtallam on Saturday the 26th July 1958 at 6 P.M.

32 Members were present:

Dr. M. SANTOSHAM, presided.

28 Members have sent messages expressing their inability to attend the State Council Meeting.

Resolution condoling the death of Drs. (1) Mrs. C. G. Herbert of Nilgiris Branch (2) A. Ramachandra Acharya, A. V. S. Sarma and M. R. Guruswami Mudaliar of Madras City Branch; (3) S. V. Sankaran of Madurai Branch; and (4) Y. G. Henry of Nagapattinam Branch; was moved from the Chair and passed unanimously, all the members standing for a minute.

Registration of Medical Practitioners under the Madras General Sales Tax Act-reference from the Madurai Branch:

The Hony. Secretary intimated the Council that as per the decision of the Council at its last meeting he had reminded the Government to issue clear orders to the Commercial-Tax Department and that he has also quoted the information furnished by Dr. S. Muthukaruppa Pillai of Nagercoil Branch in the letter with advantage. The Council decided to await the reply of Government in the matter.

The 13th Madras State Medical Conference was therefore to be decided to be held at Madras City and it was suggested that the conference may be held either during the last week of October or November; and the actual fixation of the dates was left to the Madras City Branch.

British Information Services-inclusion of local branches of I. M. A. in the list of distribution of free publications:

The Hony. Secretary informed the House that on receipt of a communication from the Regional Information Officer, British Information Services, Madras, he had sent to him a list of all the local branches of I. M. A. in the Madras State with the names and addresses of the Presidents and Secretaries thereof; that it was intended to include all the local branches of I.M.A. in the mailing list for free distribution of publications, and that therefore the local branches may, in due course, be receiving copies of publications, of the British Information Services. The papers were recorded.

Directory of Indian Scientists and Technologists at present in countries abroad.

The Hony. Secretary intimated the House that a communication was received from the Director-General, Council of Scientific and Industrial Research, New Delhi, apprising the intention of the Govt. of India to publish periodical lists of qualified scientists and technologists, and

sending a copy of a Directory so published now under Series M, for the information and remarks of the State Branch of I. M. A. The Series M is devoted to the medical personnel and the copy of the Directory now sent is the first in the series, and relates to medical personnel abroad. The Hony. Secretary informed that he had made a suitable acknowledgment to the Director-General in this regard and thanked him on behalf of the State Branch. The Directory was placed before the Council, and the papers were recorded.

Resolution.

"This Council expresses its sincere thanks to the Tirunelveli Branch of the Indian Medical Association for the excellent arrangements made for the successful conduct of the meeting of the State Council of the Madras State Branch of I.M.A. at Courtallam, and for the fine arrangements made for the boarding and lodging of the members of the Council attending the meeting."

The meeting terminated at 8 P.M.

M. Santosham, *President.*

C. Arumugam, *Hony. Secretary.*

NILGIRIS BRANCH

The monthly meeting of the Association was held on 6th September 1958 at the Lawley Institute, Ootacamund.

Election of 2 Vice-presidents to the Madras State Branch was held Dr. I. G. K. Menon, M.B., B.S., Ph.D., addressed on "Recent International Conferences at Stockholm."

SOUTH ARCOT BRANCH

The General Body Meeting of the Association was held on Saturday the 19th July, 1958 in the Government Head Quarters Hospital Premises, Cuddalore.

One President and three Vice-Presidents for the Center were elected. Dr. M. V. Bhat, M.S., (D. M. O., Cuddalore) gave a talk on "Management of Infections of the hand".

TIRUCHY BRANCH

An urgent meeting of the Association was held on Saturday the 6th September 1958 in the premises of the Medical Association Buildings, Salai Road, Woriur, Tiruchy for the election of two Vice-Presidents for the Madras State Branch of I. M. A. for the year 1958—1959.

TIRUNELVELI BRANCH

At the Annual meeting of the Association held on 27—9—'58 the following office bearers have been elected for 1958—1959.

President: Dr. D. I. Abraham

Vice-President: Dr. P. Vadivel

Hony. Secretary Treasurer: Dr. V. Sridhara Rao

Members for the Managing Committee:

1. Dr. R. Gopalan
2. Dr. K. Rama Ayyar
3. Dr. G. Subramanian
4. Dr. R. Subramaniam
5. Dr. K. Ramachandra Naidu.

Member-Auditor: Dr. S. Chandrasekaran

Member for the Central Council: Dr. T. V. K. Iyengar

Members for the Madras State Branch:

1. Dr. K. Rama Ayyar
2. Dr. S. Maragathavel
3. Dr. S. Chandrasekaran
4. Dr. R. Subramaniam